Claims

Sub A, > 1. A fairing arrangement for bridging an aircraft fixed structure and a control surface hingedly mounted on and angularly displaceable with respect to said aircraft structure, said fairing arrangement including:

a first fairing portion located on said fixed aircraft structure,

a second fairing portion located on said control surface, and

an intermediate flexible seal member disposed between said first and second fairing portions and having a proximal edge region fixed relative to one of said first and second fairing portions and a distal edge region,

wherein said flexible seal member comprises a composite sheet element of rubber or rubber-like material incorporating a plurality of reinforcing plies across at least part of said sheet element, each ply comprising one or more fabric elements, whereby the seal arrangement is deformable to accommodate differential movement between said first and second fairing portions when said control surface is angularly displaced with respect to the fixed aircraft structure and said seal arrangement defines a surface which generally conforms to the adjacent portions of said first and second fairing portions throughout at least a major extent of the range of said angular displacement of said control surface.

2. A fairing arrangement according to Claim 1, wherein at least one of said plies extends across substantially the whole of the sheet element.

3. A fairing arrangement according to Claim 1 wherein at least one of said plies comprises a plurality of fabric elements.

4. A fairing arrangement according to Claim 3, wherein each of said plurality of fabric elements is butted against a neighbouring fabric element in the same ply without significant overlap.

5. A fairing arrangement according to Claim 3 wherein at least one of said plies includes a fabric element comprising a cloth strip element extending along the distal edge region of said flexible sheet element with the axis of maximum tensile strength of said strip element extending generally along the distal edge region.

6. A fairing arrangement according to Claim 3 wherein at least one of said plies includes a fabric element comprising a cloth strip element extending along each of the side edge regions of the flexible sheet element which extend between said proximal and distal edge regions, with the axis of maximum tensile strength of said cloth strip element extending generally along the associated side edge region.

7. A fairing arrangement according to Claim 1, wherein at least one of said plies comprises a main fabric element extending over at least a central portion of said flexible sheet element to confer flexural strength to said seal member.

8. A fairing arrangement according to Claim 7, wherein said one ply, or at least one of said other plies comprises a buckle-reduction fabric element extending from the proximal edge of said flexible sheet element and of lesser extent than said main fabric element and arranged to prevent or reduce the

possibility of the flexible sheet element buckling in that region in use.

9. A fairing arrangement according to Claim 1, wherein at least the distal region of the inner surface of the flexible sheet element comprises a layer of low friction material.

10. A fairing arrangement according to Claim 1, wherein the distal edge of said flexible sheet element includes a bulbous lip or bead.

11. A method of producing a flexible seal member for a fairing arrangement comprises:

providing a tool having a mould surface conforming to the required shape of said flexible seal member,

placing on said mould surface a plurality of reinforcing plies extending across at least a major portion of said mould surface, each ply comprising one or more fabric elements and selected to provided the formed seal member with required flexural and extension characteristics,

impregnating said fabric elements with a curable or rubber or rubber-like material, and

curing said rubber or rubber-like material to provide a composite fabric reinforced seal member.

12. A method according to Claim 11, wherein said fabric elements are impregnated with said rubber or rubber-like material before placing on said mould surface.

13. An aircraft wing including a fairing arrangement according to Claim 1.

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